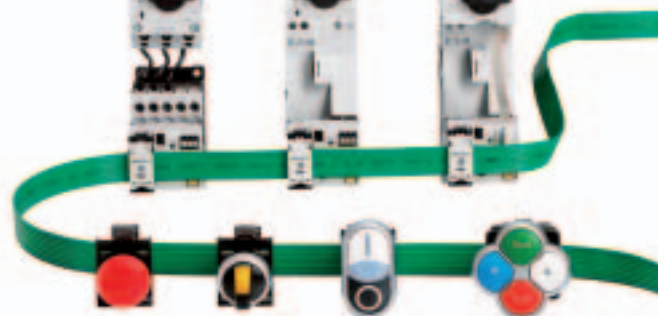




# Cost Optimization Clever Communication



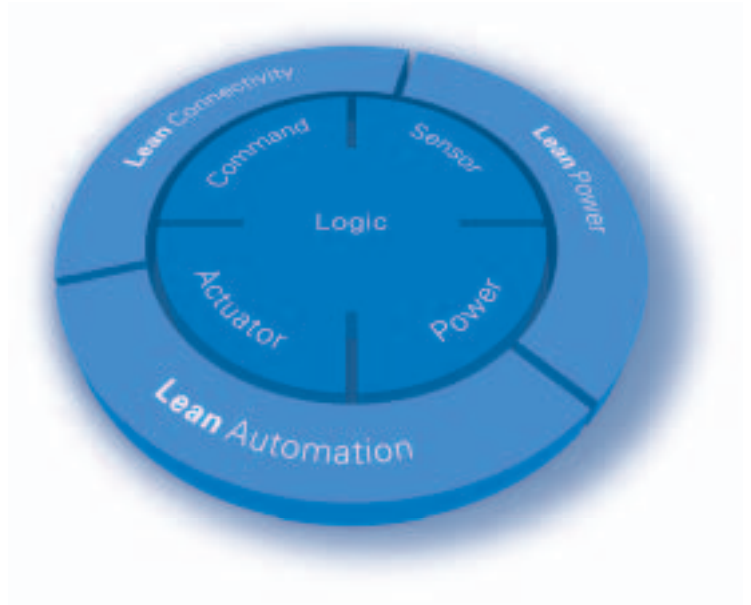
*Powering Business Worldwide*



# Lean Solution powered by SmartWire-DT®

## The Lean-Philosophie

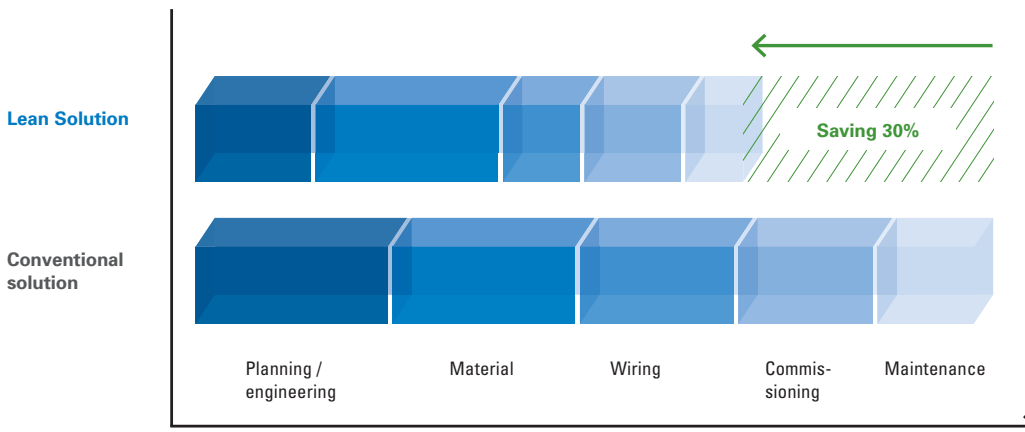
The requirements of the machine building sector are becoming increasingly more extensive. Machines have to be built in ever shorter time frames, at lower costs, and not only offer increased performance but also greater energy efficiency. The Lean Solution from Eaton and its focus on Lean Connectivity, Lean Automation and Lean Power here offer an approach that makes a decisive improvement along the entire value chain.



## Lean means greater value creation

The core principle of this philosophy is to reduce waste – whether in costs, material or time. This has led to Eaton developing products, components and processes that reduce waste and increase value creation along the entire value chain, from design to construction, commissioning, right through to expansions.

### Example: Savings in every step of the life cycle



## Benefits that reduce waste

Lean Solution ensures a considerable reduction of all costs from planning and engineering, material use and wiring, right through to commissioning and subsequent maintenance. This creates the engineering freedom needed for creative and economical solutions.



### Controlled 250 drives in the sorting system

The savings that could be made in cabling are enormous: "For us, the wiring requirement has been reduced to an eighth of what it normally would be. Thanks to SmartWire-DT the cross wiring has been reduced from 1 kilometer to 50 meters, and the cabling required for the control circuit devices on the machines has been reduced by approx. 40%. Troubleshooting has also been considerably reduced since faults can be found quickly due to the high level of data transparency of the connected stations. Instead of the two weeks required for commissioning our previous sorting plant project, we only needed 1.5 days with this project", says Christian Gormanns from Schaltanlagenbau Gormanns GmbH in review of this project.

## Eaton has the entire machine in view:

From the electrical control with automation, visualization, safety, control circuit devices and sensors, motor starters and drives to energy management including UPS system. The complete hydraulic system is also integrated in the machine solutions of Eaton.



### Lean Automation

The SmartWire-DT communication system brings the I/O level directly into the switch-gear. This is implemented with simple modules that generate digital and analog information. The new technology was also implemented in the drives and the controllers. This eliminates the need for the I/O level on the PLC. This produces automation structures that are easy to configure

### Lean Connectivity

All SmartWire-DT slaves are connected via the green cable with simple connectors. Any complex and error-prone point-to-point wiring is unnecessary. The effort required for wiring, testing and commissioning can be reduced by up to 85 %.

### Lean Power

The provision of extensive data, particularly from motor starters, drives and circuit-breakers ensures full data transparency at the controller. In this way, energy consumption can be optimized, diagnostics and maintenance can be carried out simply, and the availability of the machine can be increased.

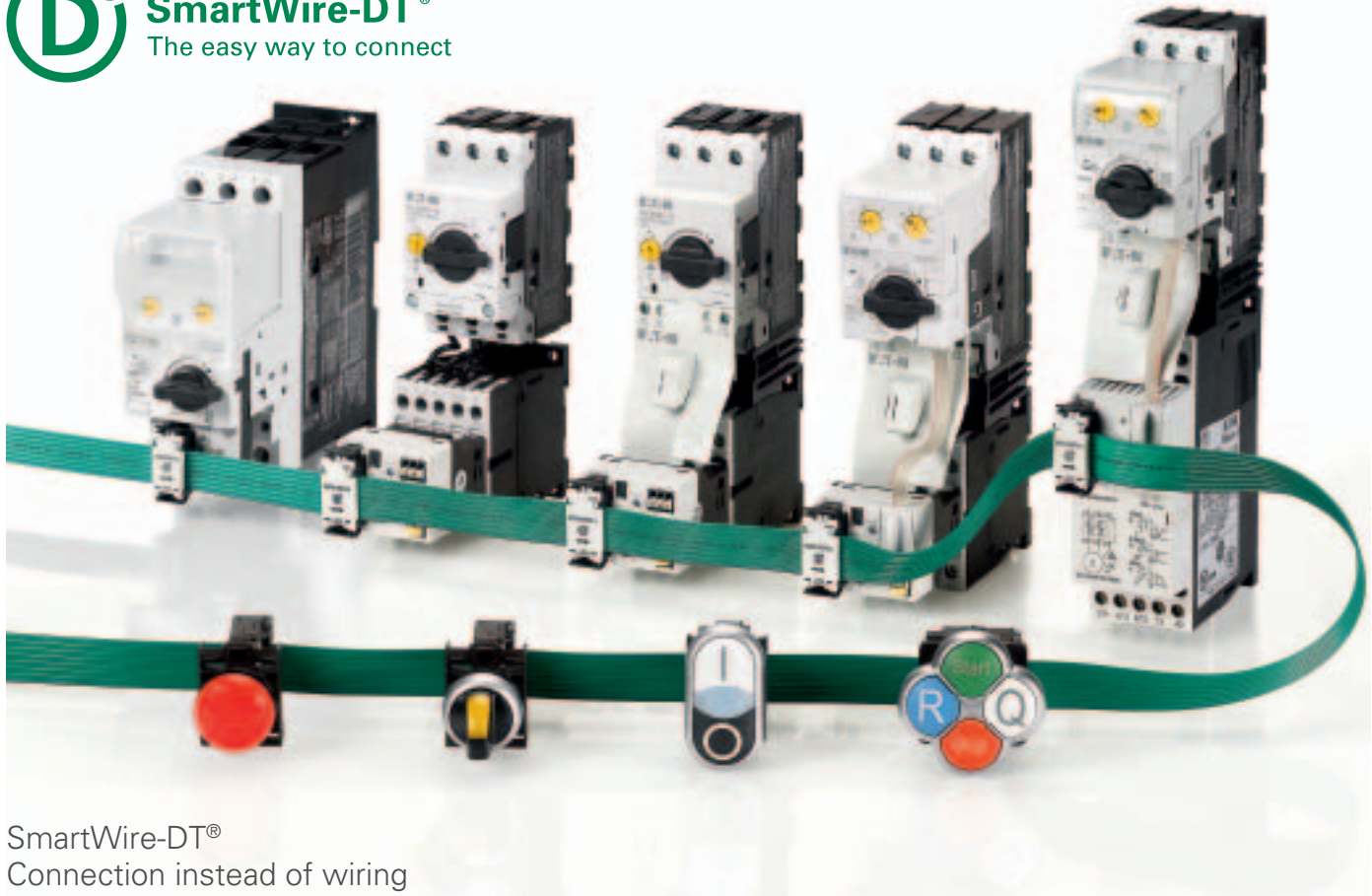


### Wiring costs cut by more than 60 %

For decades in Minden, Germany-based Minda Industrieanlagen GmbH has been a leader in the development of pressing systems for the production of glulam. One new product is a hydraulic pressing system that can be operated from up to 6 remote control panels. Each control panel features an integrated touch-sensitive display, 10 to 60 signaling units and indicator lights, pressure and toggle switches, signalling contacts, an emergency-off switch and an I/O station for third-party SmartWire-DT compatible sensors. Each control console featuring the traditional setup requires between 3 and 18 hours to wire the sensors. SmartWire-DT cuts the labor associated with that task by more than 60 percent.

# Reducing costs with SmartWire-DT®

With SmartWire-DT, Eaton is offering a trend-setting technology that enables electrical installations to be planned, designed, wired, tested and commissioned much quicker. It increases the performance capability and the availability of the system. Energy consumption is optimized at the same time.

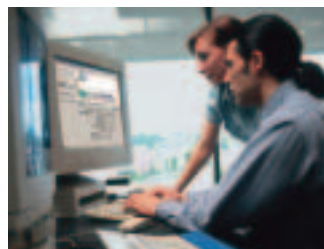


## SmartWire-DT® Connection instead of wiring

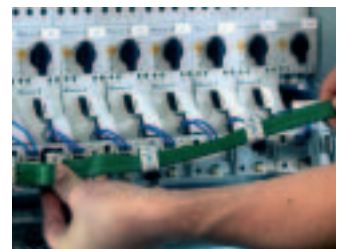
SmartWire-DT helps optimize control panel functionality even as it reduces the costs associated with it. Its revolutionary SmartWire-DT connection technology is used to reduce complexity by replacing the standard control circuit wiring with one single, continuous ribbon cable. SmartWire-DT is a unique connection solution for control panels that simplifies the installation of switchgears, facilitates simple connection to standard networks and optimizes the commissioning process.

## Reducing costs along the entire value chain

SmartWire-DT reduces the wiring effort and expense with many switchgear systems up to 85% and helps along the entire value-added chain – from the design to the construction, to the commissioning up to system expansion – in the reduction of costs. SmartWire-DT relies on the tried-and-tested Eaton industrial switchgear and grants intelligent communication features.



Efficient planning and engineering



Fault-free mounting and wiring

## SmartWire-DT®

Increase productivity. Improve profitability.

The use of SmartWire-DT offers even greater potential when combined with intelligent switchgear.

The comprehensive data delivered by the electronic PKE motor-protective circuit-breaker via SmartWire-DT helps optimize energy consumption, facilitates effective diagnostics and promotes quicker fault resolution. The NZM circuit-breaker works with a multi-step warning level concept when critical power values are exceeded and delivers energy measurement data via SmartWire-DT. The end result is unprecedented levels of data transparency for this and many other SmartWire-DT components, which in turn lays the groundwork for avoiding problems and optimizing energy consumption.

### Clear Benefits for the Customer:

- Reduced project planning and engineering
- Use of standard components
- Minimal downtimes / increased productivity
- High reliability
- Data transparency from the controller to the sensor/actuator
- Simple diagnostic options for current values
- Optimal energy management

## Eaton SmartWire-DT® Cooperation Partners

In the implementation of the trend-setting lean technology approach, Eaton is cooperating with different SmartWire-DT partners that offer both a SmartWire-DT master and a slave interface for their products. This will optimally expand the product portfolio for SmartWire-DT and make it more attractive to customers. This will enable further impressive complete solutions to be on offer worldwide in the Lean Solution field.

Phoenix Contact with the Contactron hybrid motor starter technology and the integrated SmartWire-DT communication are one of the first cooperation partners.



As an experienced technology and development partner, Hilscher will support the integration of SmartWire-DT master connections in custom devices.



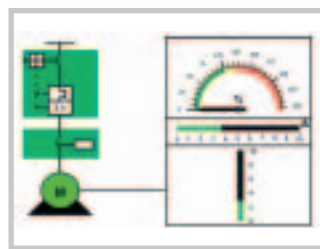
By integrating SmartWire-DT in its busbars with CrossLink technology, the cooperation partner Wöhner made it possible to integrate SmartWire-DT in many switchgear and controlgear assemblies.



Reduced time required for wiring, testing and commissioning by up to 85%



Comfortable and intuitive operation with minimum downtimes



Simple maintenance through integrated diagnostics



Simple to expand with reserved slots

# SmartWire-DT®.

## Interconnect 99 devices over 600 m.

One system, countless possibilities: Independently of the selected bus system of the higher-level control, up to 99 devices can be interconnected with the new SmartWire-DT line up to a maximum overall total length of 600 m. The "green" cable interconnects the devices inside and outside the control panel.

- 1 SmartWire-DT PLC XC-152
- 2 SmartWire-DT HMI-PLC
- 3 SUB-D data plug, 9-pole
- 4 SmartWire-DT gateways
- 5 SmartWire-DT blade terminal, 8-pole
- 6 SmartWire-DT ribbon cable, 8-pole
- 7 easy800 control relay with SmartWire-DT
- 8 SmartWire-DT input/output modules
- 9 SmartWire-DT interface for NZM
- 10 SmartWire-DT device plug, 8-pole
- 11 NZM circuit-breaker
- 12 SmartWire-DT contactor module
- 13 DILM contactors
- 14 SmartWire-DT contactor module with Manual-0-Automatic switch

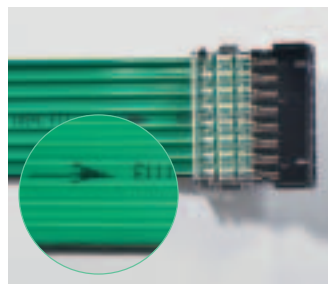


Addressing of the SmartWire-DT devices is undertaken automatically at the push of a button in the sequence in which they are mounted.

### The cable

The "green" eight-pole flat or round cables are the lifeline of the SmartWire-DT and interconnect all SmartWire-DT devices. In addition to the data lines, the supply voltages for the devices (15 V DC) and the control (24 V DC) of the contactors are included in the cable.

The flat cable has two prominent distinguishing features: Arrows indicate the direction of the cable and the black marking indicates the mounting orientation of the devices and the flat connector.

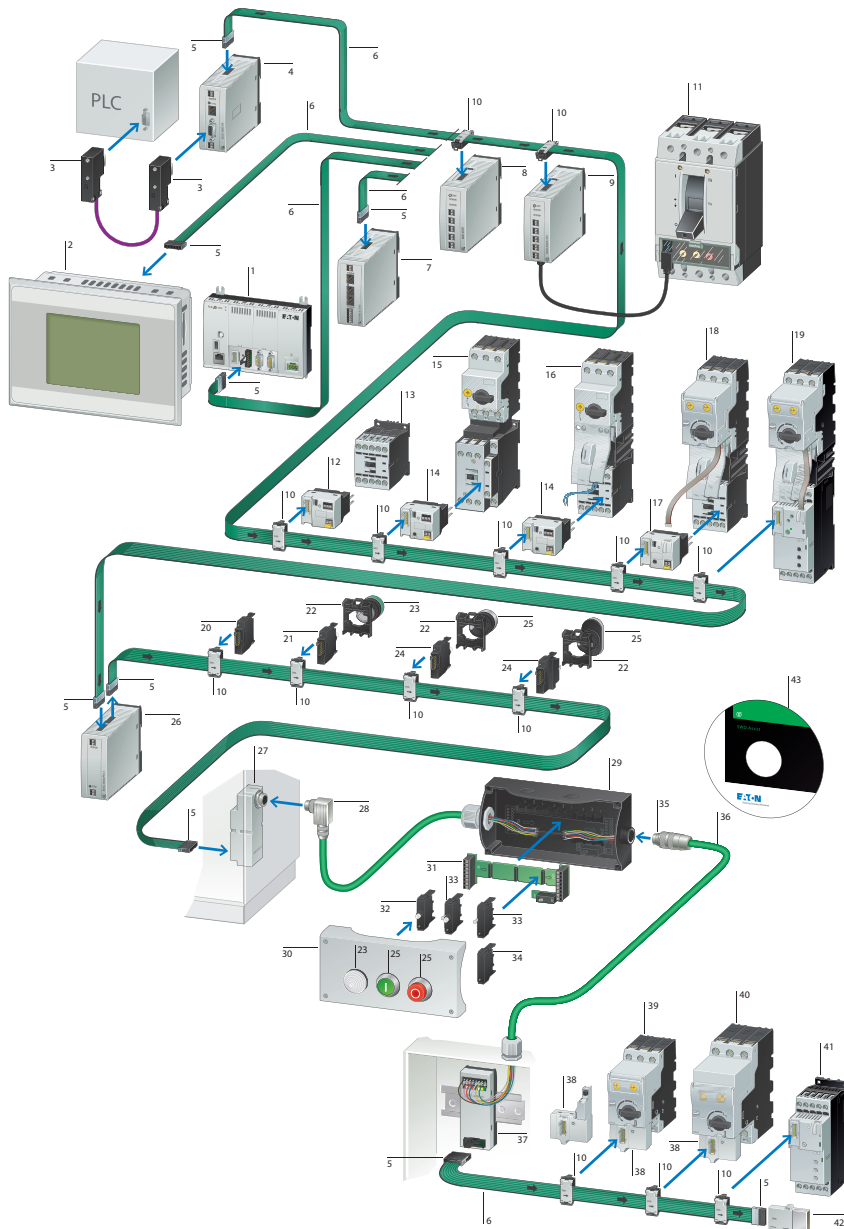


▲ **The flat cable**  
The "green" eight-pole flat cable is the lifeline of the SmartWire-DT and interconnects all devices.



▲ **The flat connector**  
The flat connection serves as the connection of the flat cable to the gateway and the bus termination, or to the respective coupling module. Mounting is safe and simple with the crimping tool – place the flat plug in the crimping tool, put the flat cable into the plug, squeeze the clamping tool – ready.





- 15 Motor-protective circuit-breaker
- 16 MSC motor starter
- 17 SmartWire-DT PKE module (motor starter)
- 18 Motor starter with PKE electronic motor protection
- 19 DS7 soft starter with PKE electronic motor protection
- 20 SmartWire-DT universal slave, front fixing
- 21 SmartWire-DT LED element, front fixing
- 22 RMQ-Titan fixing adapter for front mounting
- 23 RMQ-Titan indicator lights
- 24 SmartWire-DT function element for front fixing
- 25 SmartWire-DT operating elements
- 26 SmartWire-DT power feed module
- 27 SmartWire-DT control panel entry, ribbon to round cable
- 28 SmartWire-DT plug connector
- 29 RMQ-Titan surface mounting enclosure
- 30 RMQ-Titan surface mounting enclosure
- 31 SmartWire-DT card for function elements, base fixing
- 32 SmartWire-DT LED element for base fixing
- 33 SmartWire-DT function element for base fixing
- 34 SmartWire-DT universal slave, base fixing
- 35 SmartWire-DT plug connector
- 36 SmartWire-DT round cable, 8-pole
- 37 SmartWire-DT adapter ribbon/round cable for rail mounting
- 38 SmartWire-DT PKE module (motor-protective circuit-breaker)
- 39 PKE12, PKE32 motor-protective circuit-breaker
- 40 PKE65 motor-protective circuit-breaker
- 41 DS7 soft starter
- 42 SmartWire-DT network termination for 8-pole ribbon cable
- 43 SmartWire-DT planning and ordering tool, SWD-Assist



**1. Step: mount the device plug**  
Place the eight pole flat cable in the device plug and snap shut, ...



**2. Step: position the device plug**  
... then position the device plug as required and fix it by applying light pressure ...



**3. Step: establish device connector contact**  
... establish the device plug and flat cable contact using the plug crimping tool.



**The bus termination**  
The bus termination is at the end of every SmartWire-DT line. Either in the control panel or as a switch-in bus termination in the M22-.. surface mount enclosures.

# SmartWire-DT®.

## Linear automation.

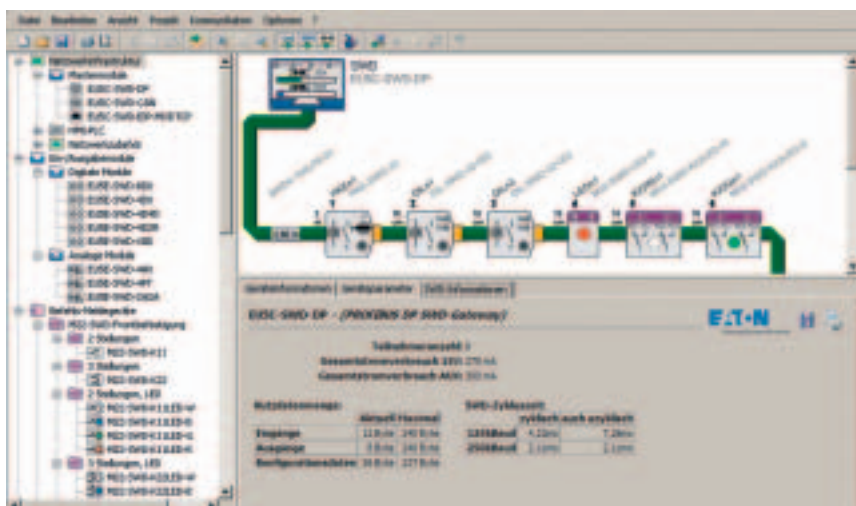
SmartWire-DT is making an especially strong mark on the field of automation through its use of distributed intelligence. Interface modules for standard switchgear are replacing the digital and analog I/O tier on the controller. Gateways make it not just possible, but in fact simple to access the SmartWire-DT network independent of the control system. At the same time, SmartWire-DT technology stands ready and waiting as an integrated part of our controllers. The result: easy-to-configure, linear automation structures with few components.

### Gateways – your portal to standard control systems

Gateways are the starting point for the SmartWire-DT network and are integrated as modules into the control system. Regardless of whether your existing PLC works with PROFIBUS-DP, Profinet, CANopen, Ethernet IP or Modbus TCP, SmartWire-DT can connect smoothly to the control system. Standardized mechanisms for the configuration and parameterization of the SmartWire-DT device are used for this. Whether you are currently using a distributed I/O system, or whether you will soon be introducing the innovative SmartWire-DT communication system: configuration and programming don't change for you. The connected modules are automatically addressed via the configuration button.



Profinet      EIP-MODTCP      Profibus-DP      CANopen



### Easily achieve you target with SWD-Assist

The SWD-Assist software supports you in the planning, engineering and commissioning of a SmartWire-DT network. You simply select the required SWD function elements from the device catalogue and place them at the intended location. The configuration can be saved and reused for other projects. A review of the network is just as possible as automatic inclusion of missing components. Various export options of the network configuration or even the input/output data also simplify the application within the programming systems of PLC manufacturers.



The SWD-Assist can be downloaded free-of-charge from our website:

<http://downloadcenter.moeller.net/en/software.html>





## HMI/PLC, XV100-Serie

With SmartWire-DT the I/O level of the PLC is integrated in the switchgear. The XV100 HMI/PLC via SmartWire-DT can thus access the digital and analog data directly from the control circuit device right through to the circuit-breaker. Gateway and I/O level are no longer needed. Visualization and PLC are combined in one powerful and compact unit. This allows you to create flexible, streamlined automation solutions with fewer components and little engineering outlay.

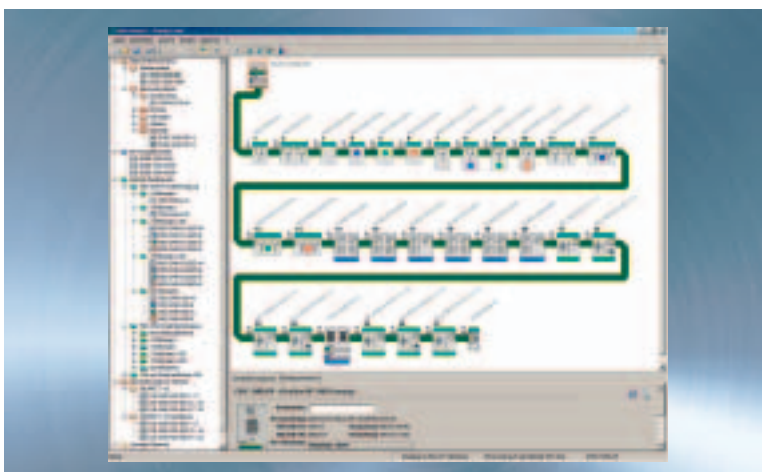
## XC152 compact PLC

Communication is the key feature of this powerful compact PLC. The XC152 allows inexpensive solutions for automation tasks thanks to the integrated SmartWire-DT master and a number of other interfaces. Innovative solutions enable data exchange via the Ethernet interface to OPC clients or the integrated WEB server. They support the integration in modern communication concepts with distributed control units.



## easy800 control relay

SmartWire-DT enables switchgear to communicate. In this way their analog and digital data can be accessed directly by the new easy800 control relays with an integrated SmartWire-DT master. The relay can access both status messages and current consumption values equally. This eliminates the need for the individual wiring of switchgear and the use of I/Os on the device.



## SmartWire-DT – twice as easy with easySoft

easySoft makes life particularly easy for the user. Selection menus and "Drag and Drop functions" simplify linking tasks. The integrated SmartWire-DT configurator facilitates rapid engineering of the SmartWire-DT line and extraordinarily easy assignment of the SmartWire-DT inputs and outputs to the easy operands. The practical off-line simulation tool enables users to check the correct functioning of the circuit diagram before commissioning and without a connected device. Online states can of course also be viewed in the program.



Updates of the easySoft can be downloaded from our website:  
<http://downloadcenter.moeller.net/en/software>

# SmartWire-DT®.

## Simply ingenious.

Conventional wiring of control circuit devices involves a lot of effort and expense – every contact or indicator light is wired individually, and separately connected to the input/output modules of the control. This requires a lot of time and has the potential for many wiring faults. SmartWire-DT is simply ingenious – the flat green cable connects control circuit devices with just a click. This saves time and reduces the sources of error.



SmartWire-DT – simply ingenious – for control circuit devices.

### RMQ-Titan installation®

RMQ Titan control circuit devices are plugged together with SmartWire-DT function elements.

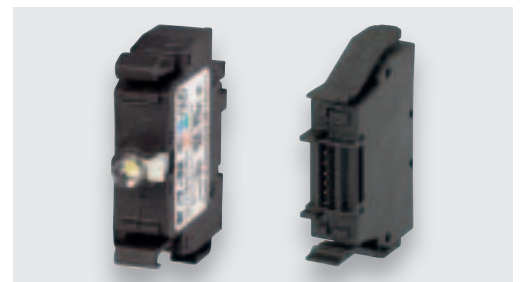
Simply insert the device plug, ready to go.



#### ▲ Function elements for base fixing

The function elements differ in their properties according to the actuation devices that are used (pushbuttons, selector switches, indicator lights, etc.) and are available in the following versions:

- Function element LED
- Function element LED with 2 positions
- Function element LED with 3 positions
- Function element with 3 positions
- Function element with 2 positions



#### ▲ Front fixing

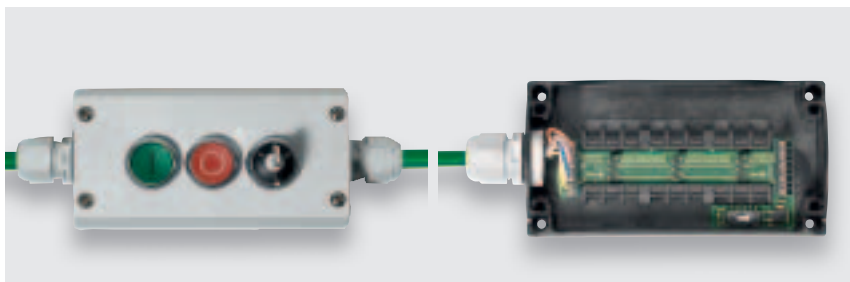
The variant shown on the left is also available for front fixing. Shown here: the front and rear view of a function element with 2 positions.



Every SmartWire-DT function element has its own address as well as self diagnostics. The benefits: fast and efficient diagnostics.

### Signal towers increase availability

Signal towers are an important component of a lean solution, since the advance warning function provides information that help the operator avoid potential failures and increase availability. Potential failures are not just detected in advance by intelligent switchgear, but in fact are also signaled by signal towers with SmartWire-DT. This allows operators to react immediately and avoid stops. This in turn significantly increases efficiency and machine availability.



#### ▲ RMQ Titan surface mount enclosure with SmartWire-DT

The green SmartWire-DT round conductor connects the control panel with the peripherals. The M22-.. surface mount enclosures are connected with cable glands or plug connectors (optional accessories). The circuit board is simply connected using colour coded push-in terminals. Now simply snap on the required base fixing function element – ready to go.



#### ▲ EMERGENCY-STOP device

The 2-position function elements are designed to ensure that a standard contact element can be used to the right and left of the SmartWire-DT function element. For the EMERGENCY-STOP device this has the benefit that the EMERGENCY-STOP circuit can be wired separately and can feature a two-channel design.

# SmartWire-DT®.

## Simply clever.

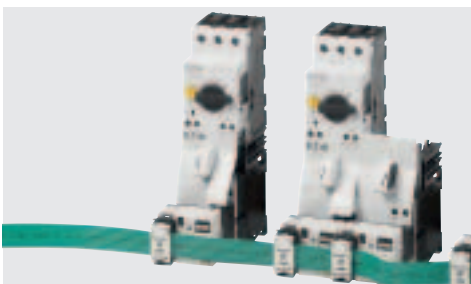
Even the conventional wiring of a control current circuit incorporating motor starters or contactors involves considerable time and effort. Every motor starter or every contactor is wired individually, and separately connected to the input/output modules of the control. This requires a lot of time and has the potential for many wiring faults and operating faults. It is really clever with our motor starters and contactors of the xStart series complemented by SmartWire-DT.



SmartWire-DT – simply clever –  
for motor starters or contactors

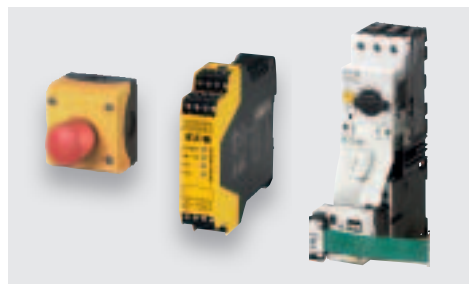
### Motor starters from standard components

A good example for workload reduction:  
The SmartWire-DT module for DILM is simply plugged on like an auxiliary contact on contactors up to 38 A. To configure a motor starter, the motor-protective circuit-breaker from the standard range is used. This combination can now be complemented by system accessories (e. g. the three-phase commoning link or busbar adapter).



#### ▲ DOL and reversing starters

Simple plugging together of xStart DOL and reversing starters up to 15 kW: These are made up of standard components and complemented with space-saving SmartWire-DT function elements. The electrical and mechanical interlock of the contactor is still possible.



#### ▲ EMERGENCY-STOP

EMERGENCY-STOP shutdown at a central point: The 24 V DC control voltage for the contactors is supplied centrally on the gateway. Thus the power supply is integrated into an EMERGENCY-STOP circuit and leads to switch off of the contactors during an EMERGENCY-STOP.

Several EMERGENCY-STOP circuits can be established within a SmartWire-DT line. EMERGENCY-STOP circuits can be simply established by the use of powerfeed 1 or 2.



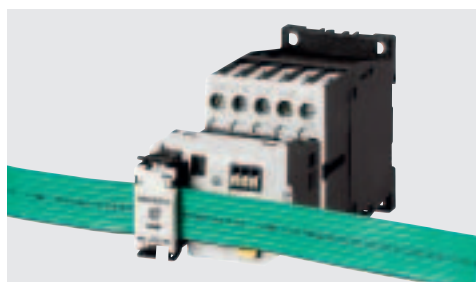
SmartWire-DT offers all the necessary information without complex wiring.



### Comfortable operation and optimum information flow

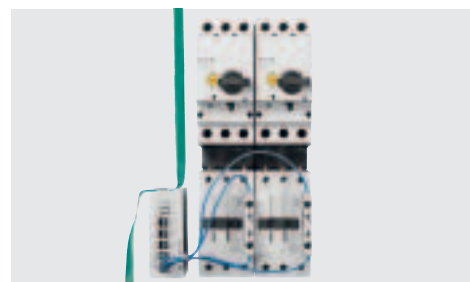
Faster commissioning through simple testing: The xStart motor starter combination can be switched on and off directly on the SmartWire-DT function element DIL/MS (manual/auto) using a screwdriver. In automatic mode, the contactor then receives its switching command from the PLC.

With SmartWire-DT it is possible to receive exact and precise status messages. Hereby a differentiation is made between trips due to a short circuit or an overload. Accordingly optimum system transparency is guaranteed.



#### ▲ Switch up to 2200 A with a coupling contactor

In addition to the size 1 and 2 contactors, the SmartWire-DT modules for DILM can also be combined with contactor relays of type DILA. This opens new possibilities for distributed control of loads with AC voltages, or the distributed control of the DILA as a coupling contactor for contactors up to 2200 A. The switching status of the controlled contactor is also determined via the two digital inputs of the SmartWire-DT module for DILM.



#### ▲ Control of AC voltage loads

AC controlled motor starter combinations are integrated into the SmartWire-DT system via the SmartWire-DT input/output modules using relay outputs. Using the digital inputs of the modules, the switch position of the contactor can be determined; with motorstarter combinations, the switch position of the motor-protective circuit-breaker can also be determined.

# SmartWire-DT®.

## Simply communicative.

The electronic motor-protective circuit-breaker PKE enables simple integration into the world of automation with SmartWire-DT. In this way, all relevant information of the motor power distribution system can be transferred to the control. The integration can be for both the individual PKE motor-protective circuit-breaker as well as for the PKE motor starter combination.



SmartWire-DT – simply communicative –  
for motor-protective circuit-breakers PKE

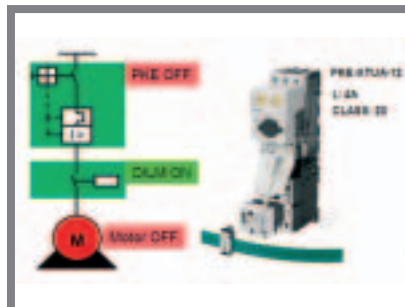
### Networked motor-protective circuit-breaker PKE

Using the function element PKE-SWD, the motor-protective circuit-breaker PKE is integrated into the system SmartWire-DT. Using the function element, all relevant information concerning the motor-protective circuit-breaker can be read such as the switching state, tripping causes, actual motor current as well as thermal motor loading without the use of auxiliary switches or additional sensors. The function element can be combined with all PKE basis units PKE 12, PKE 32 and PKE 65 and thus offers a universal networking solution for the current range from 0.3A to 65A.



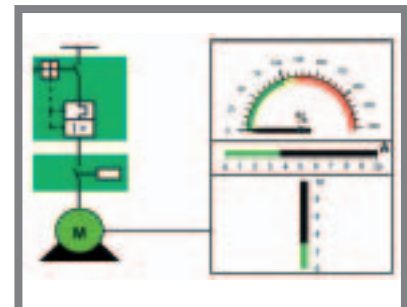
### Everything at a glance

Through the integration of the the motor-protective circuit-breaker PKE to SmartWire-DT, all switching states and status messages, which were only accessible using additional equipment up to this point, are transferred to the control. This reduces the entire control current wiring of the motor feeder and provides enhanced transparency. The additional transfer of process data such as the actual motor current and thermal motor loading indicates potential process failures in advance. This improves the service-friendliness and availability of the system.



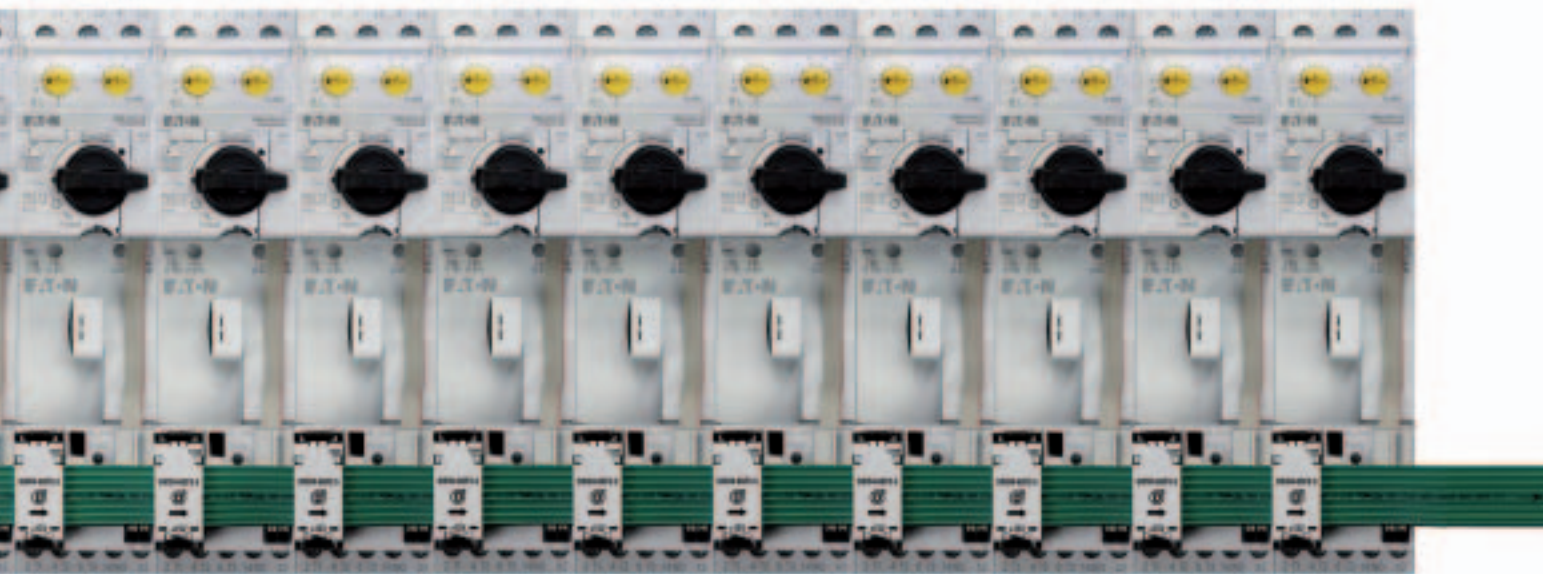
#### Status

- Switch position PKE, contactor
- Set rated current
- Set time-lag class



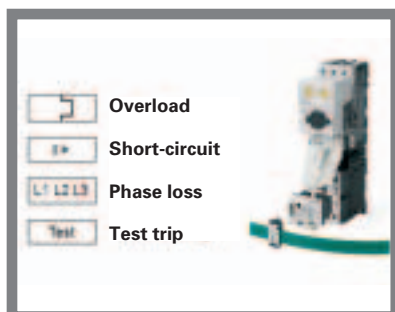
#### Current/capacity utilization

- Relative motor current value
- Thermal motor loading



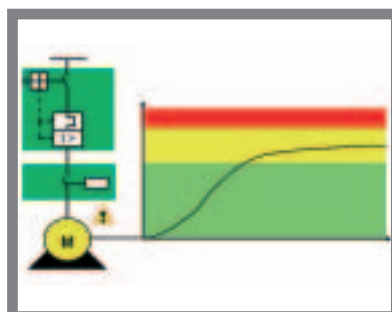
## Networked motor starter combination with PKE

The function element PKE-SWD-32 enables the integration of PKE motor starter combinations up to 32 A into the system SmartWire-DT. The function element is inserted directly onto the contactor of the motor starter combination. The integrated interface to the contactor coil enables the control of the motor starter combination and reports its state. This eliminates the entire control circuit wiring of the motor starter. Through the additional integration of the function element to the PKE, the switching states and status messages of the motor-protective circuit-breaker are transferred to the control via SmartWire-DT. The adjustable overload relay functionality of the function element PKE-SWD-32 triggers an automatic switch off and switch on of the contactor in the event of an overload. Manual switching in of the motor-protective circuit-breaker is not required, as it remains switched on.



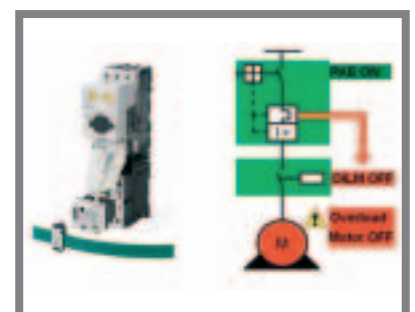
### Diagnostics

- Overcurrent (short-circuit), phase loss, overload, test



### Overload pre-warning

- Premature process standstills due to motor overload can be detected and avoided with the assistance of the thermal motor model.



### Additional functions

- Overload relay function (contactor is switched off at overload)
- Manual / automatic operation via rotary switch

# SmartWire-DT®.

## Simply efficient.

In addition to control circuit devices and motor starters, the SmartWire-DT can also communicate directly with compact circuit-breakers. The NZM module XSWD-704 is used for this purpose.. The SmartWire-DT communication system demonstrates its capabilities here. Control circuit devices with 1 bit data can be operated just as well as circuit-breakers with 32 byte data. Important circuit-breaker information is made available via SmartWire-DT. This is, for example, the phase currents or diagnostic data such as load warnings and diagnostic messages.

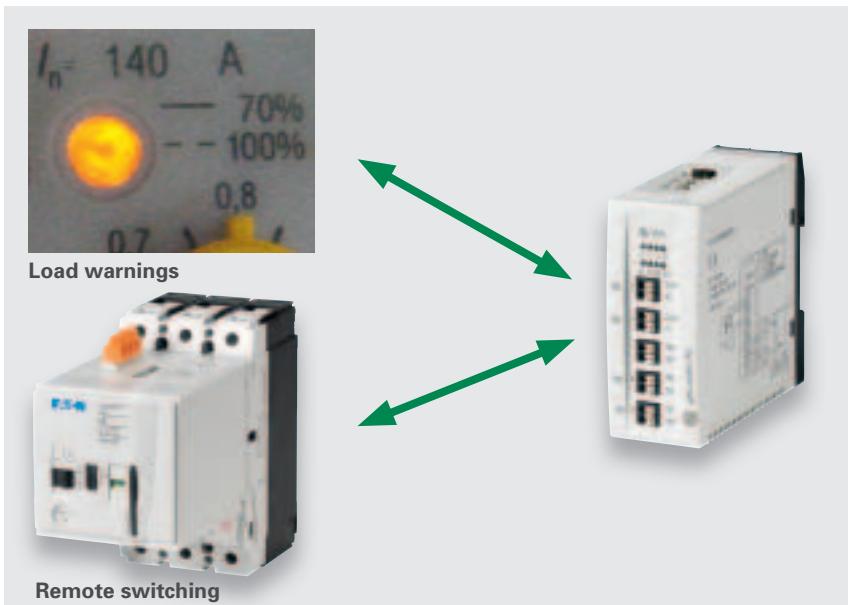
All NZM 2/3/4 with electronic releases can be connected directly to the SmartWire-DT via the NZM module. All currents up to 1600 A in the energy distribution system are thus under control of SmartWire-DT.



SmartWire-DT – high-performance communication for energy management

### NZM communication

The detection and correction of faults before they occur is the objective of the preventative warning. NZM reports excessive current values in 3 warning stages via SmartWire-DT. SmartWire-DT also assumes the control of a remote operator for the circuit-breaker, so that the wiring that would otherwise be required can be eliminated.



### Comprehensive range of data

#### Inputs

- Currents
- Status
- Diagnostics
- Energy meter
- Setting values
- Identification

All three phases and the switch position are available as input data. For diagnostic purposes, the load warnings, and in the case of a trip, information concerning the cause is sent. In addition to the active energy, the switch type and current trip setting parameters are provided.

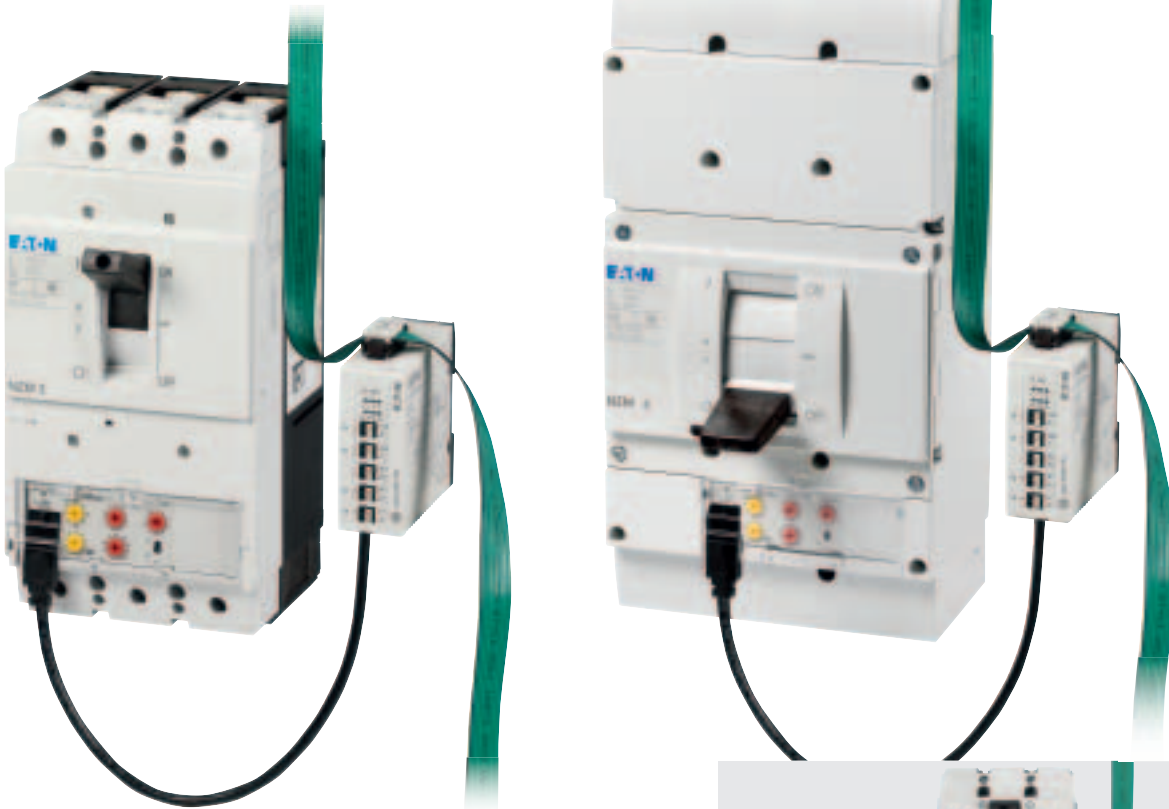
Switch on and off via remote operator as well as a reset of the energy meter can be sent as commands to the switch.

#### Outputs

- Remote operation
- Reset
- Energy meter



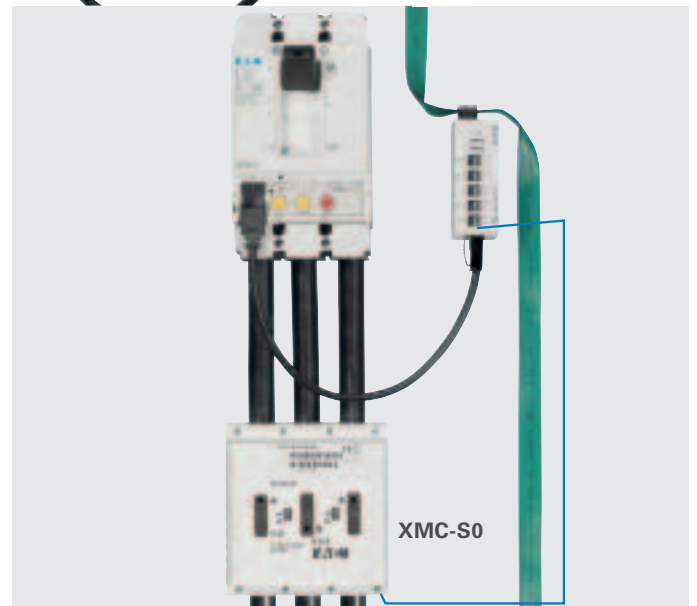




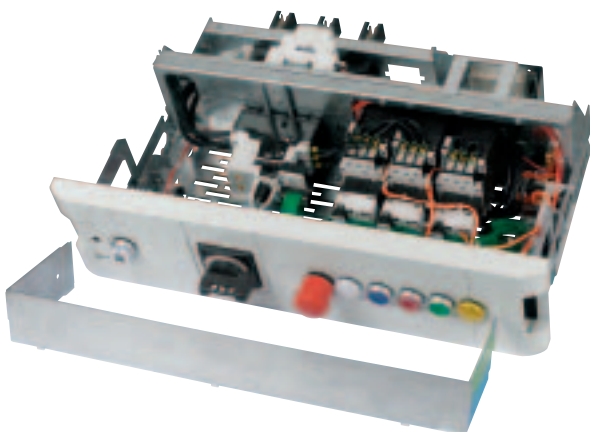
### Energy meter on board

The NZM module transfers the value of consumed active energy in the respective input or output circuit. For this purpose, a non-volatile energy meter is on board the module and can be read at any time via SmartWire-DT. This provides the prerequisite for energy optimization.

The NZM function element has a further standardized S0 interface for energy measurement in addition to the NZM interface. The NZM-XMC-S0 module, which actually measures the energy, is connected to it. It incorporates the measurement transformer and the required measurement circuitry.



### Motor Control Center with SmartWire-DT connection



The iMCC line of xEnergy control panels feature a SmartWire-DT slot that makes it a communication-ready motor control center solution. SmartWire-DT presents extensive diagnostic functions that make it easier to troubleshoot errors and minimize equipment stop times. This expanded diagnostic information simplifies analysis of operational states such as short-circuits, overloads and underloads and phase failure, including predictive remote maintenance. It is simple to swap out the slots while operations are running, ensuring operators increased availability of machines and systems. Control panel makers and xEnergy partners benefit from the simple mounting and reduced, space-saving wiring of slots thanks to SmartWire-DT.

# SmartWire-DT®.

## Data transparency inclusive.

Being able to use a controller to directly access all of a soft starter's and frequency inverter's parameters via SmartWire-DT is the epitome of ease of operation. Users can read and overwrite potentiometer settings. Extended status, error, and diagnostic messages can be retrieved directly. The result: absolute data transparency. The plug-in units make installation fast and foolproof, and the resulting connection includes the soft starter's control current supply.



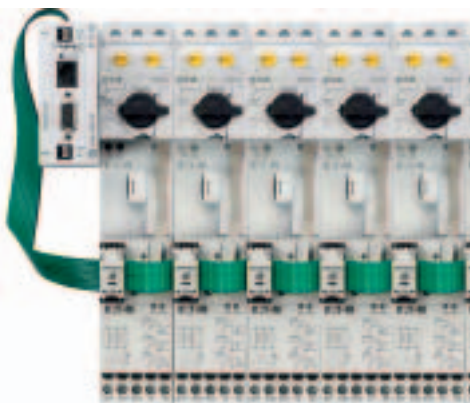
### Motor starters from our standard range of products

DS7 soft starters are connected to PKZ or PKE motor-protective circuit-breakers by means of a plug-in design that does not require any tools. NZM circuit-breakers are available for soft starting three-phase asynchronous motors with currents of 32 A and higher.

In conjunction with a PLC, SmartWire-DT is not only a simple and cost-effective solution, but also has many advantages:

- Access to all parameters (read and write)
- Read and overwrite manually configured device parameters
- Detailed diagnostics and status messages available
- Parameter access with a service laptop (parallel to PLC access) even during ongoing operation

### Motor-starter combinations with soft starters DS7



In connection with SmartWire-DT, using a motor-starter combination consisting of a PKE motor-protective circuit-breaker and a DS7 soft starter results in a number of new advantages that provide perfect motor protection and increased availability.

- Device protection against overloads
- Additional soft starter protection if there are too many starts per hour
- Overload protection relay function (in the event of an overload, the DS7 will trip instead of the PKE)
- Diagnostics and status messages available via SmartWire-DT
- Increases system availability by transmitting process-relevant data
- Advance warning function for avoiding overloads
- Eliminates time-consuming troubleshooting during commissioning and maintenance
- Adjustable current limiting function

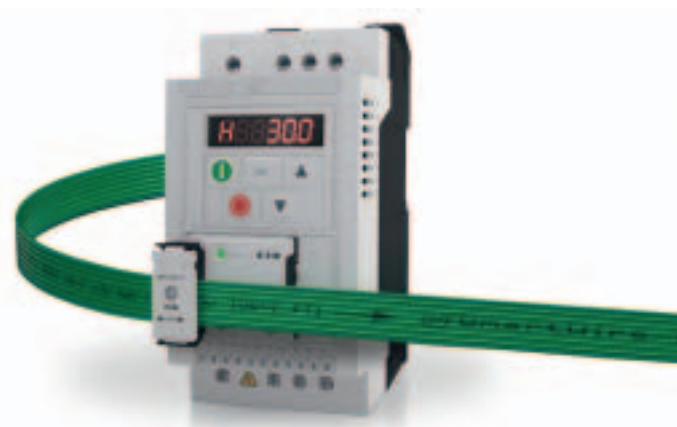


## Greater data transparency for the control room



In the past, control rooms only received information from those automation components connected via a bus system. SmartWire-DT allows all components to deliver digital information, and for many switchgears to also deliver analog data, such as related to current motor currents. The SmartWire-DT line connects not just switchgear, but soft starters and variable frequency drives as well, linking them directly to the PLC, visualization and control room. Device without direct access to SmartWire-DT can be connected via I/O boxes.

## PowerXL frequency inverters: Communicate with SmartWire-DT



### **PowerXL™ frequency inverters**

All frequency inverters of the new DC1 and DA1 series will be expandable in future with SmartWire-DT modules. SmartWire-DT will enable you to communicate with the frequency inverter in compliance with the Profidrive profile. Other profiles are available for simple applications. Enhanced diagnostics functions are provided in addition to the ability to modify parameters in the frequency inverter. Function blocks enable the simple connection to Eaton PLCs and HMIs.

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